ISUOG Basic Training

Examining the Uterus: Myometrium
Learning objectives

At the end of the lecture you will be able to:

• Recognise the typical ultrasound appearances of the normal myometrium

• Recognise the typical ultrasound appearances of abnormalities in the myometrium
Key questions

1. What are the typical ultrasound findings of a normal myometrium?

2. What are the typical ultrasound findings of common abnormalities in the myometrium?

3. Know when to refer for a specialist opinion
Normal myometrium before menopause
Myometrial pathology: MUSA

Terms, definitions and measurements to describe sonographic features of myometrium and uterine masses: a consensus opinion from the Morphological Uterus Sonographic Assessment (MUSA) group

Myometrial pathology: MUSA

- Common
  - Leiomyoma (fibroids)
  - Adenomyosis

- Rare
  - Calcifications
  - Enhanced myometrial vascularity
Most common myometrial pathology - myoma

“Benign tumour of the smooth muscle”

Most common myometrial pathology - myoma

- Echogenicity
- Shadowing
- Vascularity
Non-uniform
Mixed echogenicity

Myoma
Echogenicity

(a) Uniform Hypoechogenic

(b) Uniform Isoechogenic

(c) Uniform Hyperechogenic

(d) Non-uniform Echogenic areas

(e) Non-uniform Cystic areas

(f) Non-uniform Cystic areas

Van Den Bosch et al. UOG, 2015, 46: 284–298

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Myoma Echogenicity

Uniform Hypoechochogenic

Non-uniform Mixed echogenicity

Uniform Isoechochogenic

Non-uniform Echogenic areas

Uniform Hyperechochogenic

Non-uniform Cystic areas

Low threshold for specialist referral if atypical features

Van Den Bosch et al. UOG, 2015, 46: 284–298
Most common myometrial pathology - myoma

• Shadowing

Van Den Bosch et al, UOG, 2015, 46
Normal vascularity in the myometrium

Van Den Bosch et al, UOG, 2015, 46
Most common myometrial pathology - myoma

• Vascularity

Circumferential
Intra-lesional

Van Den Bosch et al, UOG, 2015, 46
Vascularity in myoma

Van Den Bosch et al, UOG, 2015, 46

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Relatively common myometrial pathology - adenomyosis

Abnormal presence of endometrium tissue within the myometrium
Relatively common myometrial pathology - adenomyosis

- Enlarged uterus
  - Asymmetrically enlarged
  - Globally enlarged

- Fan shaped shadowing

- Myometrial cysts

- Poorly defined endometrial-myometrial border

Relatively common myometrial pathology - adenomyosis

- Enlarged uterus
Relatively common myometrial pathology - adenomyosis

- Abnormal myometrial echogenicity

Fan shaped shadowing

'Rain in the forest' sign
Relatively common myometrial pathology - adenomyosis

- Myometrial cysts
- Poorly defined endometrial-myometrial border
Relatively rare myometrial pathology

- Myometrial calcifications
- Enhanced myometrial vascularity
Normal myometrium after menopause

- Myometrial calcifications
Retained products of conception (RPOC) / Enhanced myometrial vascularity (EMV)

Basic Training
Standardisation of the routine examination of the myometrium

- Measurement of the uterus
- Symmetry of the myometrium walls
- Echogenicity
- Myometrial lesions (well / ill defined)
- Number of lesions (location/max diameter)
- Vascularity
- Midsagittal/ transverse/ 3D
Which patients should I refer for specialist opinion?

• Those in whom you are uncertain about the diagnosis (especially if you suspect malignancy)
Key points

We should use a standardised terminology when we describe ultrasound images of:

- Adnexal lesions (IOTA)
- The endometrium /uterine cavity (IETA)
- The myometrium (MUSA)
- Deep infiltrating endometriosis (IDEA)
Key points

When in doubt:
refer for second opinion